

LIS009410628B2

(12) United States Patent

Bachofer

(10) Patent No.:

US 9,410,628 B2

(45) **Date of Patent:**

Aug. 9, 2016

(54) VALVE DEVICE

(71) Applicant: MACK & SCHNEIDER GmbH,

Fiderstadt (DE)

(72) Inventor: Steffen Bachofer, Filderstadt (DE)

(73) Assignee: Mack & Schneider GmbH, Filderstadt

(DE

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/706,127

(22) Filed: May 7, 2015

(65) Prior Publication Data

US 2015/0233476 A1 Aug. 20, 2015

Related U.S. Application Data

(63) Continuation of application No. PCT/EP2013/073221, filed on Nov. 7, 2013.

(30) Foreign Application Priority Data

Nov. 7, 2012 (DE) 10 2012 022 213

(51) Int. Cl.

F16K 1/32 (2006.01) F16K 1/22 (2006.01) F16J 15/447 (2006.01)

(52) U.S. Cl.

(58) Field of Classification Search

CPC F16K 1/22–1/221; F16K 35/06; F16J 15/447; F16C 33/80

USPC 251/291–292, 305–308; 277/303, 412 See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

1,842,788 A *	1/1932	Kramer F16K 17/32
		137/448
3,173,650 A *	3/1965	Cotterman F16K 1/2265
		251/288
4,022,424 A *	5/1977	Davis F16K 1/224
		251/214

(Continued)

FOREIGN PATENT DOCUMENTS

DE 2438875 2/1976 DE 3416970 11/1985 (Continued)

OTHER PUBLICATIONS

International Search Report of corresponding International Application No. PCT/EP2013/073221, mailed on Feb. 20, 2014.

(Continued)

Primary Examiner — John Bastianelli (74) Attorney, Agent, or Firm — Edell, Shapiro & Finnan LLC

(57) ABSTRACT

A valve arrangement having a valve, in particular, a disk valve, is provided which has a first housing with several connections for a fluid or a gaseous medium, and with a drive unit, which has a second housing with a drive mechanism arranged therein. The housings are at least essentially spaced apart from one another. The valve has a control shaft and the drive unit and a drive shaft that is operatively connected to the drive mechanism and operatively connected or operatively connectable to the control shaft by means of a coupling device. The coupling device is arranged between the first and the second housing.

8 Claims, 6 Drawing Sheets

